

pressure, adapted to deposit at least a first layer of an oxide and silicon oxide onto glass at a rate of deposition greater than about 350 Å/sec. wherein the composition comprises a precursor of tin oxide, a precursor of silicon oxide of formula $R_mO_nSi_p$, where m is from 3 to 8, n is from 1 to 4, p is from 1 to 4, and R is independently chosen from hydrogen and acyl, straight, cyclic, or branched-chain alkyl and substituted alkyl or alkenyl of from one to about six carbons, and phenyl or substituted phenyl, an accelerant selected from the group consisting of organic phosphites, organic borates and water, and mixtures thereof, and a source of oxygen.

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Claim 2. (Amended Once) The [gaseous composition] process of claim 1, adapted to deposit at least a first layer comprising tin oxide and silicon oxide onto transparent flat glass at a temperature of from 450° to about 650°C.

Claim 3. (Amended Once) The [gaseous composition] process of claim 1, adapted to deposit at least a first layer comprising tin oxide and silicon oxide onto transparent flat glass to produce a glass article having essentially no reflected color in daylight.

Claim 4. (Amended Once) The [gaseous composition] process of claim 1 adapted to continuously deposit at least a first layer of tin oxide and silicon oxide onto a continuously moving transparent flat glass substrate.

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Claim 5. (Amended Once) The [composition] process of claim 1 at a temperature below about 175°C.

Claim 6. (Amended Once) The [composition] process of claim 1 wherein the organic phosphite and organic borate accelerants have the formula $(R''O)_3P$ and

(R"O)₃B where R" is independently chosen from straight, cyclic or branched-chain alkyl or alkenyl of from one to about six carbons; phenyl, substituted phenyl, or R'" CH₂CH₂-, where R''' is MeO₂C-, EtO₂C-, CH₃CO-, or HOOC-.

Claim 7. (Amended Once) The [composition] process of claim 1 wherein the precursor of the tin oxide is R_nSnX_{4-n}, where R is a straight, cyclic, or branched-chain alkyl, or alkenyl of from one to about six carbons; phenyl, substituted phenyl, or R'CH₂CH₂-, where R' is MeO₂C-, EtO₂C-, CH₃CO-, or HO₂C-; X is selected from the group consisting of halogen, acetate, perfluoroacetate, and their mixtures; and where n is 0, 1, or 2.

Claim 8. (Amended Once) The [composition] process of claim 1 wherein the precursor of the tin oxide is an alkyltin halide.

Claim 9. (Amended Once) The [composition] process of claim 1 wherein the precursor of the tin oxide is an alkyltin chloride.

Claim 10. (Amended Once) The [composition] process of claim 1 wherein the precursor of tin oxide is chosen from the group consisting of monobutyltin trichloride, dibutyltin dichloride, tributyltin chloride, and tin tetrachloride.

Claim 11. (Amended Once) The [composition] process of claim 1 wherein the precursor of silicon oxide is selected from the group consisting of tetraethylorthosilicate, diacetoxymethylsilane, ethyltriacetoxysilane, methyltriacetoxysilane, methyldiacetoxysilane, tetramethyldisiloxane, tetramethylcyclotetrasiloxane, dipinacoloxysilane, 1,1-dimethylsila-2-oxacyclohexane, tetrakis (1-methoxy-2-propoxy) silane, and triethoxysilane.

Claim 12. (Amended Once) The [composition] process of claim 1 wherein the precursor of silicon oxide is tetraethylorthosilicate.

Claim 13. (Amended Once) The [composition] process of claim 1 wherein the accelerator comprises triethyl phosphite.

Claim 14. (Amended Once) The [composition] process of claim 1 wherein the accelerator comprises triethyl phosphite and triethyl borate.

Claim 15. (Amended Once) The [gaseous combination] process of claim 1 adapted to deposit at least a first layer of tin oxide and silicon oxide onto glass at a rate of deposition greater than about 400 Å/sec.

Claim 16. (Amended Once) The [gaseous composition] process of claim 1 adapted to deposit at least a first amorphous layer of tin oxide and silicon oxide onto glass.

Claim 17. (Amended Once) The [gaseous composition] process of claim 1 adapted to deposit a plurality of layers comprising tin oxide and silicon oxide onto glass, the outermost layer of which is further adapted for deposit of at least a second layer.

Claim 18. (Amended Once) The [composition] process of claim 17 adapted to deposit a plurality of layers comprising tin oxide and silicon oxide onto glass, the outermost layer of which is further adapted for deposit of a layer comprising tin oxide.

Claim 19. (Amended Once) The [composition] process of claim 17 adapted to deposit a plurality of layers comprising tin oxide and silicon oxide onto glass, the outermost layer of which is further adapted for deposit of a layer comprising tin oxide and fluorine.

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Claim 20. (Amended Once) The [composition] process of claim 17 wherein the second layer comprises a doped tin oxide.

Claim 21. (Amended Once) The [composition] process of claim 17 wherein said plurality of layers are deposited from a precursor mixture comprising monobutyltin trichloride, tetraethyl orthosilicate and triethyl phosphite.

Claim 22. (Amended Once) The [composition] process of claim 1 adapted to deposit at least a first layer comprising tin oxide and silicon oxide onto glass, said first layer having a refractive index which changes continuously between the glass substrate and the top of the layer.

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Claim 23 (Amended Once) A process for forming an oxide composition comprising oxidizing a gaseous composition at a temperature below about 200°C at atmospheric pressure, adapted to deposit at least a first amorphous layer comprising tin oxide and silicon oxide onto glass at a rate of deposition greater than about 400 Å/sec., the layer having a controlled index of refraction, wherein the composition comprises a tin oxide precursor, a silicon oxide precursor of formula $R_mO_nSi_p$, where m is from 3 to 8, n is from 1 to 4, p is from 1 to 4, and R is independently chosen from hydrogen and acyl, straight, cyclic, or branched-chain alkyl and substituted alkyl or alkenyl of from one to about six carbons, and phenyl or substituted phenyl, and at least one accelerant chosen from the group consisting of boron and phosphorous esters and water.

Claim 24. (Amended Once) The [gaseous composition] process of claim 23 adapted to continuously deposit at least a first layer comprising tin oxide and silicon

oxide onto a continuously moving flat glass substrate at a temperature of from about 450° to about 650°C, and comprising monobutyltin trichloride, tetraethyl orthosilicate and an accelerant.

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Claim 25. (Amended Once) A process for forming an oxide composition comprising oxidizing a gaseous composition at a temperature below about 200°C and at atmospheric pressure, adapted to deposit at least a first layer comprising amorphous tin oxide and silicon oxide onto glass at a temperature of from about 450° to 650°C at a rate of deposition greater than about 350 Å/sec. wherein the composition comprises:

a tin oxide precursor of formula R_nSnX_{4-n} , where R is a straight, cyclic, or branched-chain alkyl, or alkenyl of from one to about six carbons; phenyl, substituted phenyl, or $R'CH_2CH_2-$, where R' is MeO_2C- , EtO_2C- , CH_3CO- , or HO_2C- ; X is selected from the group consisting of halogen, acetate, perfluoroacetate, and their mixtures; and where n is 0, 1, or 2;

a silicon oxide precursor of formula $R_mO_nSi_p$, where m is from 3 to 8, n is from 1 to 4, p is from 1 to 4, and R is independently chosen from hydrogen and acyl, straight, cyclic, or branched-chain alkyl and substituted alkyl or alkenyl of from one to about six carbons, and phenyl or substituted phenyl;

one or more accelerants selected from the group consisting of water and organic phosphites and organic borates of formula $(R''O)_3P$ and $(R''O)_3B$ where R'' is independently chosen from straight, cyclic or branched-chain alkyl or

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alkeynl of from one to about six carbons; phenyl, substituted phenyl, or R'''CH₂CH₂-, where R''' is MeO₂C-, EtO₂C-, CH₃CO-, or HOOC-; and a source of oxygen.

Claim 26. (Amended Once) A [composition] process according to claim 25 in which the precursor of the tin oxide is an alkyltin halide, the precursor of the silicon oxide is tetraethylorthosilicate, diacetoxymethyl-t-butoxysilane, ethyltriacetoxysilane, methyltriacetoxysilane, methyldiacetoxysilane, tetramethyldisiloxane, tetramethylcyclotetrasiloxane, dipinacoloxysilane, 1,1-dimethylsila-2-oxacyclohexane, tetrakis (1-methoxy-2-propoxy) silane, or triethoxysilane, and the accelerant comprises one or both of triethyl phosphite and triethyl borate.

Claim 27. (Amended Once) A [composition] process according to claim 26 in which the tin oxide precursor comprises monobutyltin trichloride, the silicon oxide precursor comprises tetraethyl orthosilicate and the accelerant comprises triethyl phosphite.

Claim 28. (Amended Once) A process for forming an oxide composition comprising oxidizing a gaseous composition comprising at least one precursor of a metal oxide and an accelerant selected from the group consisting of organic phosphites, organic borates, and water.

Claim 29. (Amended Once) The process of claim 28 wherein at least one precursor for a metal oxide is selected from the group consisting of compounds of tin, germanium, titanium, aluminum, zirconium, zinc, indium, cadmium, hafnium, tungsten, vanadium, chromium, molybdenum, iridium, nickel, and tantalum.

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Claim 30. (Amended Once) The process of claim 28 further comprising a precursor for a silicon oxide.

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Claim 31. (Amended Once) A process for forming an oxide composition comprising oxidizing a gaseous composition comprising a metal oxide precursor and an accelerant selected from the group consisting of phosphites, borates, water, alkyl phosphine, arsine and borane derivatives, PH₃, AsH₃, B₂H₆, O₂, N₂O, NF₃, NO₂ and CO₂.

Claim 32. (Amended Once) The process of claim 31 wherein the metal oxide precursor is a precursor of metal oxides selected from the group consisting of tin oxide, germanium oxide, titanium oxide, aluminum oxide, zirconium oxide, zinc oxide, indium oxide, cadmium oxide, hafnium oxide, tungsten oxide, vanadium oxide, chromium oxide, molybdenum oxide, iridium oxide, nickel oxide, and tantalum oxide.

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Please cancel claims 33-49 without prejudice and add the following new claims:

- 50. A product produced by the process of any one of claims 1-32.
51. A product produced by the process of any one of claims 1-32 wherein said oxidizing is effected in a chemical vapor deposition process.--

REMARKS

Claims 61-64 of Applicants' February 12, 1999 Amendment in the parent application, which the Examiner indicated he would not enter, comprise process and product by process claims. These claims have been replaced by new claims 1-32 and